

Hella Quality Management

Guidelines for Suppliers (HP-C-509)

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SQ[®]

**Strategic
Quality**



*Ideas today for
the cars of tomorrow*

HP-C 509 Version 2010

1. Introduction

A world of continuously changing customer expectations and worldwide competition requires continuous improvement of all products and services as well as business processes and corporate procedures.

Customer satisfaction through quality in all aspects is a crucial success factor for HELLA as a supplier of complex products for the international automotive industry and consequently for you as our contractor (termed "supplier" hereafter), whose products are used in Hella assemblies.

The achievement of **zero-defects quality** for all supplies is an absolute prerequisite which can only be achieved and secured through the common efforts of Hella and its suppliers:

Avoiding defects instead of discovering defects and continuous improvements in the entire supply chain, customer inquiry, offer, order, product development, start of production, volume deliveries and field operation are indispensable requirements which we must and want to fulfil with the active help of our suppliers.

This guideline highlights Hella's requirements for suppliers and also refers to the valid international standards, methods and implementation instructions (e.g. by VDA) which are necessary to achieve common objectives. This makes it possible to implement a common quality strategy, to guarantee a smooth workflow between our suppliers and Hella and to minimize costs.

Area of application

The guideline is binding for all products and services supplied by a supplier to Hella KGaA Hueck & Co, or to a company associated with Hella where Hella has the majority share and is part of "Framework Supply Agreement for the procurement of manufacturing materials", "Hella General Terms of Purchasing" or comes into operation by individual agreements.



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Head of Corporate Purchase Management



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2. Hella's quality and environmental policies

The following extracts from Hella's quality and environmental policies should provide the supplier an orientation which focus is to be considered with regard to these subjects.

The benchmarks for Hella's actions are customer satisfaction through first-class quality of all products and services, as well as cooperative work and a high level of expertise.

The [zero defects quality](#) of our products, actions and services, combined with expertise, innovation and internationalism, will secure the satisfaction of all customers in the long term, and thus our competitiveness.

Hella quality policy

Quality is the no-compromise fulfillment of all product characteristics and work procedures agreed with the customers. The target is zero defects for delivered quality during the product life and for all Hella services. To secure these claims and to guarantee customers consistently high quality in every respect, we plan quality down to the last detail during the development of product- and manufacturing process, using carefully chosen methods. This planning procedure is carried out independently of whether production is later to take place on Hella premises or at the suppliers, and includes all substances and materials used, of course. After SOP, the serial quality of the product is assured and continually improved by means of accompanying quality observation and control.

Meeting customer requirements and fulfilling internal quality targets have the highest company priority.

We also expect this procedure from our suppliers, who have to have an effective, successful quality management system available.

Hella environmental policy

Hella is committed to protecting the environment. In order to implement this environmental policy, Hella has had its plants certified according to ISO 14001[1]. We require our suppliers to meet the relevant valid environmental legislation. We expect effective environmental management from our suppliers, which guarantees adherence to the relevant valid environmental regulations and improves the supplier's environment situation continuously and efficiently. On request, the supplier must be able to demonstrate appropriate waste-avoidance, recycling and disposal concepts for both products and packaging.

Proof is recommended in the form of a certified environment management system.

3. Quality management

A correlation between the supplier's organizational and technical prerequisites and Hella's quality requirements is the basis for a successful business relationship.

In detail, Hella requires the following from suppliers:

- 3.1 Quality requirement as a condition for delivery** In order to meet the high expectations of the automobile industry, Hella trusts the performance and commitment of its own employees to a large extent, and expects the same attitude towards employees and partners from its suppliers. This is a major precondition for the quality capability the supplier has to prove.

□ Supplier activity	□ Hella activity	□ Obligation of proof towards Hella
Quality requirement levels	Actions/prerequisites	Methods, documents
Corporate culture	➤ Co-operative, target-oriented management	▪ Completion and follow-up of division-related target agreements
	➤ Promotion of initiative and creation of opportunities for personal development of the employees	▪ Delegation of responsibility and competence
	➤ Qualification of employees and promotion of quality consciousness	▪ Training in tools, methods and standards see 3.2, 3.3 ▪ Support in solving quality problems ▪ Requirement-based employee assignment
Management system	➤ ISO 9001:2008	▪ Certification by a third party
	➤ Implementation of a Quality Management system according to ISO/TS 16949 requirements.	
	➤ ISO/TS 16949	▪ Training and application
	➤ ISO 14001	▪ Environment management activity or certification by a third party
	➤ Further development of an effective procedural organization	▪ Management Manual
	➤ Creation of organizational and technical requirements for collecting and evaluated quality information	▪ CAQ system
Quality assurance	➤ Avoiding faults ➤ Systematic processing of faults ➤ Avoiding repeat faults	▪ Small Q-control loops ▪ Problem-solving techniques ▪ Cause-effect analysis ▪ Feedback to development and engineering change process
Audits	➤ Regular internal audits	▪ System ▪ Process ▪ Product
Continuous improvement process	➤ Introduction and maintenance for all products, processes and services	▪ Employee training ▪ Programs, targets and reviews
Supplier development	➤ Cooperation on partnership basis ➤ Joint project work	▪ Exchange of information ▪ Implementation of training sessions, providing methods

3.2 Quality planning and cooperation

Advanced quality planning carefully designed to avoid faults during product and process development ensures that only technically mature products are produced using capable production processes.

Quality planning levels	Actions/prerequisites	Methods, documents
Definition phase	➤ Definition of requirements	<ul style="list-style-type: none"> ▪ Requirement specification ▪ Schedule and cost frame ▪ Preparation of inquiry
Inquiry phase	➤ Selection of potential suppliers	<ul style="list-style-type: none"> ▪ Meeting minimum supplier requirements ▪ System audit if appropriate ▪ Evaluation of capability
	➤ Inquiry	<ul style="list-style-type: none"> ▪ Inquiry documents
Concept preparation	➤ Determination of Hella expectations	<ul style="list-style-type: none"> ▪ Analysis of requirement specification
	➤ Check of specification, deadline and pricing	<ul style="list-style-type: none"> ▪ Revision of contract ▪ Feasibility study ▪ QFD ▪ Benchmark analysis
Quotation phase	➤ Preparation of a binding quotation	<ul style="list-style-type: none"> ▪ Performance specification / deadlines / prices
Placing orders	➤ Analysis of quotation	<ul style="list-style-type: none"> ▪ Checklists
	➤ Placing of orders with suitable suppliers	<ul style="list-style-type: none"> ▪ Binding order documents, specifications, deadlines, prices
Implementation of concept	➤ Integration in Hella project team	<ul style="list-style-type: none"> ▪ Advanced quality planning ▪ Control Plan / Production Steering Plan
	➤ Estimation of quality risks	<ul style="list-style-type: none"> ▪ Process audit ▪ Product/Design FMEA ▪ Fault tree analysis/risks
Development	➤ Monitoring and evaluation of design drafts and prototypes	<ul style="list-style-type: none"> ▪ Design review ▪ Sturdy design ▪ Design for manufacturing /Assembly ▪ Design for reliability
	➤ Checking manufacturability	<ul style="list-style-type: none"> ▪ Trial planning
Production preparation	➤ Estimation of possible production risks	<ul style="list-style-type: none"> ▪ Process FMEA
	➤ Optimization of production methods and operating equipment, packaging	<ul style="list-style-type: none"> ▪ Operational test run ▪ Trial planning ▪ Test planning
Pre-series	➤ Checking and evaluating production reliability	<ul style="list-style-type: none"> ▪ Analysis and proof of capability for testing equipment, machines and processes ▪ Full-Run test / process audit ▪ Cleanness requirement according to specification
	➤ Minimization of probability of faults	<ul style="list-style-type: none"> ▪ Plans of Action
Series production start-up phase	➤ Series production approval at suppliers	<ul style="list-style-type: none"> ▪ Measurement sequence and SPC ▪ Process release
		<ul style="list-style-type: none"> ▪ Initial sample inspection report/ PPAP ▪ Define limit samples
Release of supply phase	➤ Release by Hella	<ul style="list-style-type: none"> ▪ Release report
	➤ Supplier assessment	<ul style="list-style-type: none"> ▪ Q-performance, flexibility, delivery reliability, cooperation

3.3 Quality control in supplier's series production, conditions for delivery

The quality assurance actions in the series production are based knowledge gained during the development phase and observation of the field use of comparable products, and are used to consolidate and continuously improve the level of quality achieved.

Self-regulating processes and automated tests should be used wherever it makes technical and economical sense.

Employee quality responsibility must be further developed in line with technical progress and customer expectations.

Areas of quality control	Actions/prerequisites	Methods, documents
Procurement	➤ Securing of delivery quality	<ul style="list-style-type: none"> ▪ Evaluation of quality performance ▪ Acceptance test certificates in compliance with DIN EN 10204 ▪ Evaluation of supply reliability
Production	➤ Control of machine parameters	<ul style="list-style-type: none"> ▪ Process data sheets ▪ Self-regulating processes
Tests	➤ Continuous supervision of process capability	▪ SPC/control chart technique
	➤ Rapid recognition and elimination of deviations	▪ Operator self control
	➤ Recording and evaluating quality data	▪ Results using suitable IT programs
		▪ Pareto analysis
	➤ Securing machine availability	▪ Preventative maintenance
	➤ Ensuring proper packaging	▪ Packaging plan
Complaints processing	➤ Clear marking of all parts and packages	▪ ERP system
	➤ Cause-Effect analyses	<ul style="list-style-type: none"> ▪ Problem-solving techniques such as e.g. DMAIC, 5-Why, Ishikawa ... ▪ 8D Report
	➤ Corrective and preventative measures	
Storage and transport	➤ Avoiding repeat faults	
	➤ Correct and fault-free handling, storage and transport	▪ Computer-supported forced workflows
	➤ Consideration of manufacturing data and expiry dates where applicable	▪ FiFo principle

4. Implementation of basic requirements

The most important Hella requirements from the quality management process described which have to be met and documented by the supplier before the beginning of the business relationship and/or during current business have been singled out and will be described in more detail below:

4.1 Quality Management System (QM-system) and quality capability

The supplier has effectively introduced a QM system in his company and thus proves his quality capability.

A Quality Management System that is aligned to the requirements of ISO/TS 16949 [11] is a prerequisite for a supplier relationship with Hella.

The minimum requirement is a certificate on the basis of the respectively valid version of ISO 9001-2008[2]. Hella recommends third party certification in compliance with ISO/TS 16494 and DIN/EN ISO 14001 (Environment Management System).

Additional requirements can be defined according to VDA Volume 6, part 1{8} or the QS-9000[3] documents, and specific customer documents may also have to be heeded.

The efficiency of the QM system is mirrored in

- Continuous and provable improvement of all business and manufacturing processes and products
- Delivery quality
- Supply reliability
- Continuous observation of the field use of his products and obligation to provide customer information
- Efficiency and speed in implementing corrective actions
- Communication on all levels
- Processing of new products and changes to serial products professionally and in line with schedules.

Hella must be informed of expiry of a certificate without re-certification being planned at least three months before the expiry date. New certificates must be sent to the Hella Material Group Manager or Purchasing contact without a separate request having to be made. If a certificate is de-recognized, Hella must be informed without delay. Hella reserves the right to carry out audits on quality management systems, processes and products at short notice, with the customer if appropriate, following prior announcement. The auditor must be granted access accordingly.

The supplier must ensure that his sub-suppliers also meet the above-mentioned requirements. As proof, the supplier must be in a position to present the valid certificate issued by an accredited certifying company (3rd party audit). If the supplier places orders with sub-contractors, these must also meet the requirements of this guideline. Hella must be informed in good time about the use of and change in sub-contractor and must approve this. A production process and product release must be carried out. Hella reserves the right to audit the sub-contractor at short notice, with the customer if appropriate, following prior announcement. This does not release the supplier from his responsibility towards the sub-contractor and Hella, however.

4.2 Further basic quality principles

In addition to the standards listed, Hella ordering documents are binding, e.g.

- Order drawings including the requirements these specify such as DIN standards, Hella standards, technical conditions of delivery, data sheets etc.
- Agreed test instructions and testing equipment
- Additional order details e.g. packaging regulations
- Special legal requirements
- Special requirements related to environmental protection and recycling.

4.3 Delivered quality and incoming goods

The products must not have any design, material or processing defects and must comply with the specifications and properties contractually agreed. The supplier has to bring proof of composition of the materials used and their individual components as well as environment-related aspects. All the materials must be proved to be registered in the IMDS (International Material Data System).

A quality control report is used to inform suppliers about non-conforming deliveries. The costs incurred to Hella for this report are to be borne by the supplier. In the case of defects of low value and minor importance, Hella works with specified flat rate amounts. Scrapping and reworking costs are recorded by Hella and charged to the supplier.

Hella assumes that all substances for use in products delivered to Hella (e.g. raw materials, process materials, components, assemblies) that require registration in line with REACH (EC directive 1907/2006: Registration, Evaluation and Authorisation of Chemicals) have been pre-registered by the supplier or sub-supplier and then registered at Hella for the purpose of application within the time window prescribed by REACH. If, contrary to expectations, this is not the case, Hella must be informed immediately.

The QM system introduced at the suppliers and the quality assurance process derived from this form the basis for the ability of the supplier to achieve freedom from defects in all the products and services delivered by the supplier or on his behalf ("zero-defect quality"). On account of the high quality standard thus achieved, there are practically no defects to be found in random sample testing of incoming goods.

Hella will report defects in the delivery to the supplier immediately as soon as they have been determined according to a proper course of business. At Hella, incoming goods inspection is restricted to a visual inspection of the transport packaging for external signs of damage, e.g. transport damage, a quantity check and an identity check on the basis of the comparison of the delivery papers with the order documents. Further tests, in particular measuring tests, do not have to be performed. To ensure the quality of its own products, Hella also has an efficient QM system in place. Within this context, Hella carries out device-specific tests accompanying production in compliance with the requirements of the QM system in order to guarantee the earliest possible detection of defects in its production including the integrated delivery and performance scopes of the suppliers. Insofar, the supplier waives its objection of belated notice of defect.

The Hella part number inc. revision status according to the Hella drawing, must be quoted on the delivery note and the smallest packaging unit. If there is no revision status noted on the drawings, the issue level according to the delivery schedule or order must be quoted.

Caused by REACH every supplier of a product (including packaging) has to declare to Hella all SVHC-substances within the product, which are in a concentration bigger than 0.1% percent by weight included. SVHC („substances of very high concern“) are in a EU publication listed, this list is permanently enlarged.

4.4 Complaints procedure, 8D Report

The supplier has to reply to every complaint within 10 working days using a meaningful 8D report. This period can be shortened if necessary. Interim containment measures must be initiated immediately and reported

- to guarantee delivery of fault-free goods
- to keep costs for the supplier and Hella as low as possible.

Interim reports must be presented on time if requested.

Hella has to be informed in writing in advance of any possible delays. The supplier must examine the products complained about carefully (defect-cause analysis). He has to summarize the results and planned corrective actions including deadlines for their implementation in an 8D Report without delay (according to the 8D Report form on the Hella website) and forward this to Hella. Proof must be provided to Hella of effective implementation of the corrective actions.

Hella reserves the right to carry out an audit on the supplier's premises in case of problems caused by the supplier and unacceptable reaction time, and to charge the costs incurred to the supplier.

4.5 Quality documentation

Documents and records from the product and process development phase, as well as from the production phase of the delivered product, must be presented on request. In particular, the results of the quality tests carried out at the suppliers' and their sub-suppliers' and the audit results must be documented, including planned and effectively implemented corrective actions, and provided to Hella or Hella's customer on request at any time. Any deviations from this procedure must be agreed between the partners at the time at which the contract is concluded. For parts with special characteristics and increased documentation requirements (refer here also to VDA Volume 1[4]), quality records must be stored at the suppliers' and his sub-contractors' for at least 15 years after SOP.

For all other characteristics, a sensible documentation system must be set up as described in VDA Volume 1 (proof methods). These specifications do not replace legal requirements. Longer storage times are recommended, bearing in mind the limitation periods for product liability claims.

4.6 Quality agreements and ppm management

With regard to the operational implementation of the strategic "Zero-Defects Quality" target, Hella and the supplier agree quantifiable objectives for the quality of deliveries (ppm target agreements) in relation to a period to be defined.

The target value is specified in

$$\text{Fault share [ppm]} = \frac{\text{Ausfallteile}}{\text{Anzahl gelieferte Teile}} \cdot 1000000$$

Ausfallteile = defective parts

Anzahl gelieferter Teile = number of delivered parts

(ppm = parts per million / maximum number of defective parts per million parts delivered)

To simplify communication and wherever technically practical and feasible, only one target value should be agreed for each product family delivered by suppliers or if possible for all products delivered.

The ppm results are recorded at Hella, advised to the supplier and part of supplier evaluation. At the same time, they form the basis for specific actions for continuous improvement of quality.

The agreement on ppm values does not signify a quality level accepted by Hella. All purchasing parts which are recognized as defective will basically not be accepted and will be charged to the supplier.

4.7 Engineering change management/Q-problems

The supplier is obliged to inform Hella about any quality problems or blocking of products or processes immediately and in writing, usually before the products are delivered, and to agree the necessary corrective actions with the Quality Assurance of the Hella production plants.

The supplier must inform Hella as soon as possible, but 9 months before introduction of the change at the latest, of any technical changes he intends to introduce for the delivery of released contractual objects.

Hella reserves the right to carry out tests and a release process before the change is implemented.

The supplier informs Hella Purchasing before carrying out all the planned changes in products and processes, both before and after SOP (Start of Production), e.g. in the case of:

- Changes in design, specification and material
- Use of new, modified or replacement tools
- Manufacturing methods or production processes
- Relocation of production within a manufacturing location or to other locations
- Changes in suppliers of products, components, materials, services or software
- Restart of production equipment after closure of more than 12 months.

The supplier is also obliged to inform Hella if one of the above points is applicable to a sub-supplier.

The supplier coordinates the scope of new approval tests (initial samples) with Hella. He makes sure that serial production deliveries to Hella are carried out only after the initial samples have been approved by Hella (see section 5.10). The changes are to be documented in the part life cycle.

If old versions still exist at the time the change is made, Hella must be informed of the quantities bound by purchasing obligation so that a decision can be taken about their use.

After changes, the first deliveries must be specially marked on the delivery note, containers and parts themselves, if appropriate. Details of this must be agreed in writing between Hella and the supplier before the parts are delivered.

If this procedure is not followed, Hella reserves the right to charge any related costs incurred to the supplier.

4.8 Continuous improvement process

The supplier has introduced a structured process of continuous improvement for all products, processes, workflows and services in his company. He can prove that it is used for the products delivered to Hella and the activities connected with this business relationship. Its effectiveness is proved by continuous improvement of the quality performance, prices, delivery performance, flexibility and cooperation. Hella is shown the respective programs and actions for continuous improvement on request.

5. Quality in the Time-to-Market process

We have made it our task to involve our suppliers in the quality planning of a new project as early as possible. We always require our suppliers to carry out systematic quality planning within the context of project management. This planning includes both the parts manufactured by the supplier and his purchased parts.

The person responsible for the project at Hella must be named. At least all the planning steps listed below must be carried out by the supplier for the respective part or project.

5.1 Feasibility study

Technical documents (e.g. drawings, specifications, environment requirements, packaging regulations, requirement specification etc.) prepared by Hella must be analyzed and evaluated by the supplier in the context of checking the contract. This check provides the supplier with the possibility of submitting his experience and suggestions to the advantage of both sides. A feasibility study must be presented to Purchasing, together with the quotation, and is a prerequisite for order placement.

5.2 Advanced quality planning

To ensure “zero-defects quality” in all phases of the cooperation, the supplier is obligated to draw up a binding advanced quality plan for prototypes, pre-serial samples and serial production deliveries, to document this in test sequence plans (Control Plan) and to coordinate it with Hella.

The Control Plan is in accordance with the requirements of ISO/TS 16949, annex A. It must be agreed in advance if the advanced quality planning should meet the requirements of VDA, Volume 4, Part 3, or the QS-9000 documents (APQP/Advanced Product Quality Planning).

The commitment to “zero-defect-quality” and therewith to defect prevention as well as to continuous improvement is an essential part of the contract and valid without any acceptance.

5.3 Planning contents

- Scheduling
The supplier draws up a project-related schedule on the basis of the deadlines presented by Hella. The schedule is updated regularly by the supplier during the whole project phase and presented to Hella if requested. Potential deviations from the schedule have to be indicated by the supplier in good time and agreed with Hella.
- Work/production flow chart
The supplier prepares a production flow chart for the whole process chain. Work plans have to be drawn for all component parts and components. These must contain complete information of process steps, internal and external transportation, means of transport as well as the machinery and equipment used. Manufacturing and raw part drawings as well as process descriptions have to be drawn as required.
- Reliability requirements
The reliability requirements contained in the requirement specification/drawing must be implemented with the aid of suitable methods of reliability management and validated on the basis of respective reliability tests and evaluations.

5.4 Product and process FMEA

Taking the application of his products at Hella and Hella's customers into account, the supplier carries out preventive risk analysis (FMEA) for all products delivered to Hella and the processes linked with these, and updates the FMEA whenever deviations of product and/or process quality occur as well as when changes are made as described in section 4.7. All the parameters affecting product safety must be integrated in the analysis. Points evaluated as critical must be improved in the short term by means of suitable corrective and preventive actions to enable specifications, properties and product safety as well as capable manufacturing to be guaranteed. To implement the actions, deadlines, and responsible persons have to be named and proved if required.

Independently of the product and process FMEAs prepared on his own responsibility, the supplier agrees to cooperate in the system or interface FMEAs initiated by Hella. Results must be taken into account in the supplier's further development process.

Details are defined in VDA Volume 4[6], Part 2, as well as in the QS-9000 documents.

Results must be recorded as described in section 4.5.

5.5 Control Plan

Within the Control Plan, the results of the Product-FMEA, Process-FMEA, experience with similar processes and products as well as the utilization of methods of improvement have to be considered. A detailed description of the procedure of drawing up a Control Plan is available in VDA Volume 4 and in the QS-9000 documentation (APQP).

Based on the Control Plan, the supplier assures compliance with all the routine tests, taking the agreed measurement and inspection equipment as well as the sampling scheme into consideration.

The Control Plan and all other related documents (records of part and process approvals as well as inspection results) have to be provided to Hella on request.

5.6 Planning serial production

The planning of lines and operating equipment includes the planning and manufacturing / procurement of all the operating equipment required to produce the component. The capability or suitability of operating equipment must be proved. Capabilities must be proved individually for multiple jigs or molds. Care must be taken that operating equipment in sufficient capacity and function is available at the latest when off-tool parts are produced at the sampling date. Internal and external means of transport and packaging must also be taken into consideration.

Coordination of serial monitoring

All product and process characteristics are important and must be kept in a reliable process. Special characteristics require the proof of process capability. For this purpose, the supplier must use suitable methods e.g. quality control cards (SPC) to monitor these characteristics. If process capability cannot be proven, a 100% test must be carried out. Characteristics that cannot be measured or only measured in a destructive test must be monitored and documented using suitable methods.

Limit samples

Where necessary, respective limit samples must be agreed between Hella and the supplier. In the case of decorative parts, this is obligatory.

5.7 Capability of testing equipment, machines and processes

By applying suitable statistical procedures, the supplier must ensure that the used machines, tools, measuring and test equipment as well as the processes in which these are introduced are suitable and capable for the production of products supplied to Hella.

The characteristics for which capability studies have to be provided will be agreed between Hella and the supplier. However, this does not release the supplier from his responsibility of defining further characteristics related to his processes or characteristics of the sub-suppliers.

Capability of testing equipment

For all characteristics, the supplier defines the testing method with the appropriate testing equipment. For the planned measuring equipment a suitability of the test-process has to be proven. The measuring process and the tolerances of the characteristic to be measured has to be considered for this.

Proof has to be brought in accordance with the requirements of VDA Volume 5[7] (test process suitability) or QS 9000-MSA.

Proof of machine and process capability

The investigation of machine capability and process capability are basically described in VDA, Volume 4, Part 1, and must be performed according to this.

The following capability indices can be agreed for special and critical characteristics or process parameters:

Machine capability index:

$$C_{mk} \geq 2.0$$

Here, a large number of random checks is taken and evaluated within a short period of time.

Temporary process capability index:

$$P_{pk} \geq 2.0$$

Process capability index:

$$C_{pk} \geq 1.67$$

Here, smaller numbers of samples are taken and evaluated over a longer period.

For all other agreed characteristics, the following capability indices are binding:

Machine capability index:

$$C_{mk} \geq 1.67$$

Temporary process capability index:

$$P_{pk} \geq 1.67$$

Process capability index:

$$C_{pk} \geq 1.33$$

If these minimum requirements are temporarily not met, 100% tests must be carried out until the capability is achieved through corrective actions. Deviations from this must be agreed with Hella.

5.8 Status of sub-suppliers and their products

The use of sub-suppliers that meet the quality requirements has to be guaranteed for the project and is the responsibility of the Hella suppliers. In case of nonperformance, sub-supplier development programs have to be set up. Implementation must be guaranteed before the start of series deliveries at the latest.

The status of quality planning for purchased parts must be reported regularly. The production process and product release of products from sub-suppliers has to be concluded before production process and product release of Hella suppliers.

5.9 Audits

The supplier carries out internal planned audits (e.g. VDA Volume 6, Part 3[9]) for all the products delivered to Hella and all the processes linked with their development and production at regular intervals, planned annually in advance. This is based on contractually defined product specifications and properties as well as further agreements affecting the deliveries, e.g. logistics and packaging. In the event of deviations, the supplier initiates all the corrective actions necessary and ensures their effective and long-term implementation.

In addition, Hella and its customer are authorized to carry out process, product or system audits with advance notice in order to check whether the supplier's quality assurance actions guarantee Hella requirements.

If quality problems occur which are caused by performances and/or deliveries of the supplier's sub-contractors, the supplier must carry out an audit at the sub-contractor's if requested to do so by Hella, with Hella participation if appropriate, and present the results to Hella.

5.10 Product and process release

For product release, the supplier is obligated to submit initial samples to Hella before the start of serial production; these samples must comply with all the specifications and properties specified in the contract:

- Dimensions
- Materials and processing
- Applications/functional interface
- Limit samples

Unless agreed otherwise, this proof must be brought on at least 5 parts.

This allows any deviations to be corrected in good time, thereby preventing systematic errors in serial production.

Without part and process approval any series deliveries are forbidden. Initial samples and all component parts and materials used for their production, have to be produced under series conditions with series equipment without any exception.

The content and complexity of necessary documents must be discussed with the Hella Purchasing department for the specific project.

It has to be decided in advance which bases for initial sample reports have to be used: VDA, Volume 2[5] or QS-9000 documents. The respective submission level must be defined.

The alignment points given on the drawing must always be considered. If the Hella drawing does not contain this information, the alignment points determined during measurement must be recorded by the supplier in the release documentation [ISIR].

The process release at the supplier's is granted when a process audit according to VDA Volume 6, Part 3, has been passed successfully with rating A, as well as after a full-run capacity test passed according to Hella guidelines. A process release can also be granted in the case of an AB rating. An improvement plan must be drawn up and processed for the open points.

Hella reserves the right to carry out the process audit and full-run test at the supplier's and at the sub-supplier's if necessary.

Hella can check or request the results of the process release from at the supplier's if necessary.

For standard parts as well as products for the aftermarket, releases can be agreed on the basis of "supplier data sheets" upon request and requirement by Hella Purchasing.

5.11 Traceability

The supplier is obliged to guarantee the traceability of the products he supplies.

The products must be marked or some other suitable method chosen to ensure that in the event of a defect being discovered, all other products which could be defective can be identified and blocked until subsequent measures have been agreed between the supplier and Hella.

5.12 Re-qualification test

Contents, complexity and intervals are agreed between Hella and the supplier before the start of series production and documented within the Control Plan. If there is no agreement, re-qualification tests have to be carried out at least once a year.

In the event of negative test results, the reason for the defect must be determined, corrective actions initiated and the Quality Assurance staff in the Incoming Goods department of the plant to be supplied must be informed immediately.

Unless otherwise agreed, the respective requirements from ISO/TS 16949 or the QS-9000 documents are valid. All products are subject to a complete dimensional and functional test, in accordance with the Control Plan, taking the customer's specifications for material and function into account. The supplier provides Hella with the documentation within three working days on request.

6. Methods of supplier escalation

6.1 Escalation process for suppliers

If quality or logistics problems occur repeatedly at the supplier's, they are included in the Hella escalation process. The aim of the process is to implement suitable actions at the supplier's so that the products and materials delivered meet Hella requirements again. Depending on the duration and seriousness of the problems, they are classified in one of three escalation levels.

The basic procedure for each level is as follows:

- **Analysis** of the escalation cause and of the problem.
- **Agreement on an action plan** to eliminate the causes of the escalation, in order to get the quality back in line with targets.
- **Implementation** of the action plan.
- **Monitoring/tracking** of the action plan.
- Depending on the effectiveness of the actions, either **escalation or de-escalation** takes place to the next level.

If the subjects and actions are not processed sufficiently efficiently by the supplier, Hella retains the right to compel the supplier to obtain external help from a competent service provider.

Escalation level 1: Escalation level 1 is activated when the problems cannot be processed satisfactorily within the scope of normal workflow. In the course of the escalation process, the supplier has to set up an effective problem-solving process and present this to the Quality department of the Hella production plant regularly on site.

Escalation level 2: In escalation level 2 the action plan is monitored on site at the supplier's to make sure it is adequate and effective. This can also take place within the context of quality and/or logistics audits. The results of the on-site analysis are documented in an action plan. The supplier is responsible for implementing the actions and has to report to those responsible about the respective status at regular intervals.

Escalation level 3: If the quality requirements in escalation level 2 are not fulfilled, the supplier is classified under escalation level 3. This means the supplier is blocked for new inquiries and placement of orders for all Hella companies world-wide. We also reserve the right to forward the information to the supplier's certification authority.

At escalation level 3 the existing problems are analyzed by a Hella team on site. The supplier must be prepared to support all activities of the Hella employees. The supplier's general management must ensure the compliance with all the actions agreed.

In order to guarantee the implementation and effectiveness of the planned actions, progress is supervised and documented on the basis of regular reviews.

Escalation level 3 ends with de-escalation. If a supplier support project does not run successfully and the reason for this is caused by the supplier, a re-positioning of this supplier in the portfolio of Hella Purchasing will take place.

6.2 Additional Control Level

The "additional control level" is an additional inspection of purchased parts. The purpose of this process is to implement a filter which avoids defective purchased parts caused by poor supplier quality performance arriving at Hella production lines

ACL 1 (Additional control level 1): ACL 1 requires an additional 100% test of the material to be provided by the supplier. The appropriate testing station must be separated from production (minimum distance 10 m). The test results must be documented every day at the testing station. The marking of the purchased parts checked by the supplier must be agreed between Hella and the supplier.

The supplier must report the inspection results regularly to Hella according to ACL report (Hella 1280).

ACL 2 (Additional Control Level 2): ACL 2 requires an additional inspection of the purchased parts by an independent service provider representing Hella interests. The supplier pays the costs incurred for this inspection. The selection of the service provider must be agreed with Hella, since customer requirements (OEM) must be taken into account.

A weekly report of the inspection results must be sent to Hella by the service provider according to ACL report (Hella form 1280).

To revoke ACL 1 / ACL 2, all the following conditions must be met:

- Preventative measures must be implemented and their effectiveness proved.
- At least four weeks of defect-free additional 100% test
- or at least as many defect-free parts during the additional 100% testing as would make up 5 delivery batches.
- Written acceptance by Hella.

7. Specific requirements for electronic components

7.1 Release of electronic components:

The following proofs are to be provided by the supplier for all new electronic components to be introduced at Hella:

- Successful implementation of the release test according to the qualification guidelines of AEC-Q100/101/200 (more detailed tests must be carried out in addition if required)
- Complete proof methods according to PPAP Level 3

Furthermore, all the requirements documented in "Hella Requirements for Electronic Components" Hella standard N-67500 [12] must be met.

7.2 Proof of process capability:

Process capabilities, in accordance with section 5, must be proven for electronic components for all functional, safety and quality-related processes. In addition, the use of statistical methods such as Part Average Test and Statistical Bin Analysis are a pre-requisite to support the zero-defects strategy.

8. Applicable documents, literature

Details on the standards and methods of Quality Management specified in this guideline can be found in the respectively latest version of the following documents.

Send your request to

Hella, Central Purchasing
Corporate Purchase Management (CPM)
Quality Management
Rixbecker Str. 75
59552 Lippstadt/Germany
Tel.: +49(0)2941/38-0
Fax.: +49(0)2941/38-31327
Internet: www.hella.com

who will be glad to help with the interpretation and introduction of methods and standard requirements.

Source for standards

Beuth Verlag GmbH
Postfach 11 45
D-10772 Berlin
www.beuth.de

- [1] ISO 14001 Environment management systems
- [2] ISO 9001 Quality management systems, requirements
- [3] QS-9000 documents

Verband der Automobilindustrie e.V. (VDA) - German Association of the Automotive Industry

VDA source

Verband der Automobilindustrie e. V. (VDA)
Quality Management Center (QMC)
An den Drei Hasen 31
D-64110 Oberursel
www.vda-qmc.de

- [4] Volume 1 Proof methods
- [5] Volume 2 Guaranteeing delivery quality
- [6] Volume 4 Guaranteeing quality during product realization - methods and processes -
- [7] Volume 5 Suitability for testing process
- [8] Volume 6 (Part 1) QM system audit
- [9] Volume 6 (Part 3) Process audit
- [10] Volume 6 (Part 5) Product audit
- [11] ISO/TS 16949 Quality management systems
Special requirements when ISO 9001 is used for series and service parts production in the automotive industry.

National legislation

- Guideline 2002 /95/EC RoHS Restriction of the use of certain hazardous substances in electric and electronic devices
- REACH EC directive 1907/2006: Registration, Evaluation and Authorisation of Chemicals

- [12] Hella standard 67500: Hella Requirements for Electronic Components

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